

SOUND REPRODUCTION EQUIPMENT

4038

RIBBON MICROPHONE

Principal Features

★ Specially suitable for all types of musical work.

★ Substantially flat frequency response from 30—15,000 c/s.

★ Bi-directional (figure of eight) polar curve shape accurately maintained in both horizontal and vertical planes.

★ Extremely low (non-linear) distortion.

★ Excellent transient response.

★ Exceptionally low hum pick-up.

Standard Telephones and Cables Limited

DESCRIPTION

The 4038 ribbon microphone is a pressure-gradient transducer designed as a result of several years of research and sets a new high standard of fidelity for ribbon microphones.

This microphone is accepted as one of the world's best microphones and is widely used by the foremost broadcasting Authorities.

It is essentially a studio instrument and is especially suitable for orchestral and all musical work because of its smooth wide range frequency response, absence of transient distortion and relatively high sensitivity, which is comparable with that of the best moving coil microphones.

Every microphone is factory tested in free-field conditions and has to pass a stringent performance specification.

The frequency response is exceptionally flat from 30—15,000 c/s and throughout this range the shape of the bi-directional (figure of eight) polar response is maintained substantially constant both in the horizontal and vertical planes.

The ribbon is of extremely low mass and is correctly damped so that the transient response is exceptionally good.

By use of hum-neutralising internal wiring and effective magnetic shielding of the toroidal 'ribbon-to-line' transformer (housed in the base of the microphone), a reduction of 30—40 db in the response to stray disturbing magnetic fields is secured compared to that of the great majority of moving coil microphones.

A field of 1 milligauss at 50 c/s gives an unweighted maximum hum output equivalent to an acoustic pressure of + 5 db relative to 0·0002 dynes/cm^2 (20 micro-Newtons per square metre).

Non-linear distortion is practically non-existent at all levels which will be encountered in practice. Even at extreme low frequencies the total harmonic content is not more than $\frac{1}{2}$ to 1% at levels approaching the threshold of pain. At all frequencies and sound levels normally encountered, the total harmonics are less than 0·1%.

The microphone is compact, unobtrusive and robust. The case, which is made of heavy gauge perforated brass, backed by a finely woven monel wire mesh to exclude dust, is designed to protect the microphone from damage. The special shape of the case also contributes to the acoustic performance.

The microphone may be mounted on a stand or suspended from lugs which enable it to be swivelled to face in any desired direction. It may be tilted to an angle of 90° relative to its base.

The standard finish is black shrivel enamel relieved by satin-chrome plating. The outlet is a 3-pin connector inside the stem of the microphone. The two outer pins connect to the line and the centre pin to the body of the microphone and a 4069A jack is required for connection thereto. The stem is fitted with a ring safety clip to retain the jack.

When used on a floor stand a 395-LTA-4A anti-vibration mounting is recommended if complete freedom from mechanical shocks and vibration is desired.

The 4038 microphone is manufactured by agreement with the British Broadcasting Corporation and is protected by B.B.C. patent Nos. 738,864 and 742,006.

SPECIFICATION 4038-A (TYPICAL VALUES)

MEAN SENSITIVITY

Open circuit voltage per dyne/cm² (micro-bar)	0·06 mV.
Open circuit voltage level per micro-bar, reference 1 volt	—85 db.
Power delivered into 30 ohms for 1 micro-bar, reference 1 mW.	—76 db.
American ASA rating, reference 1 mW.	—151 db.

ELECTRICAL IMPEDANCE

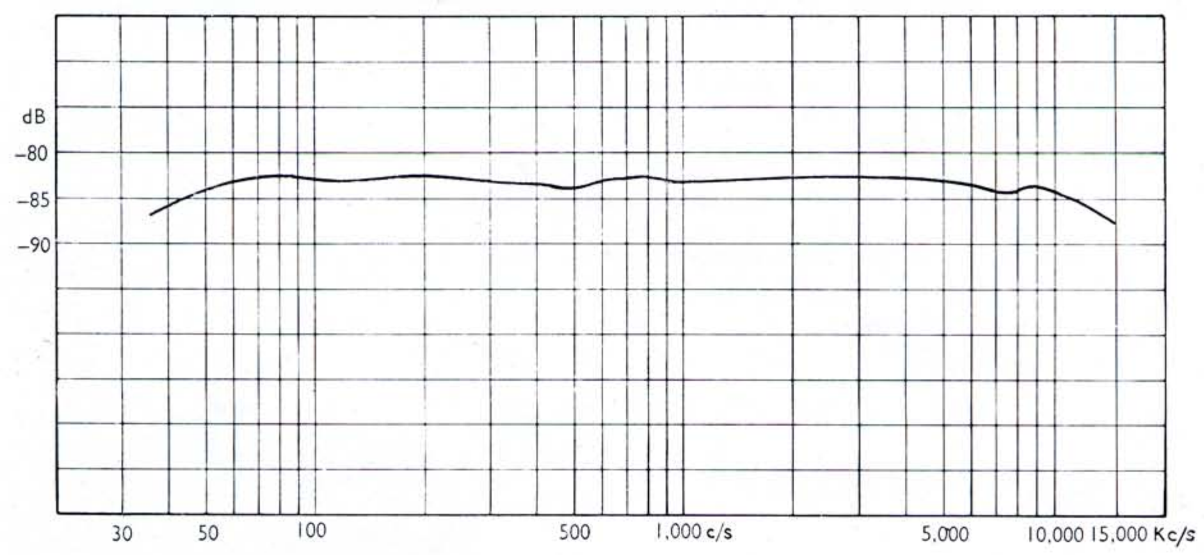
Nominal value ... ... 30 ohms.

NOTE. The microphone is normally worked into an impedance which is high compared with 30 ohms. It may, however, be terminated by a resistance as low as 50 ohms without appreciably impairing the frequency response, although there will be some loss of sensitivity and a consequent reduction of the signal-to-noise ratio at the amplifier input.

The input transformer used to step up the signal to the grid of a valve should preferably present a high impedance to the microphone, but must be designed to work from a source of 20 to 50 ohms impedance.

FREQUENCY RESPONSE

Fig. 1 Typical Free Field response (0db = 1V/dyne/cm²—open circuit).



EQUIVALENT ELECTRO-MAGNETIC HUM PICK-UP

Less than + 5 db on ·0002 dynes/cm² for 1 milligauss at 50 c/s.

DISTORTION (Non-linear)

Less than 1 % for a sound intensity of 125 db above 0·0002 dynes/cm² (20 micro-Newtons per square metre) at 110 c/s and less than 0·1 % for + 125 db at 250 c/s.

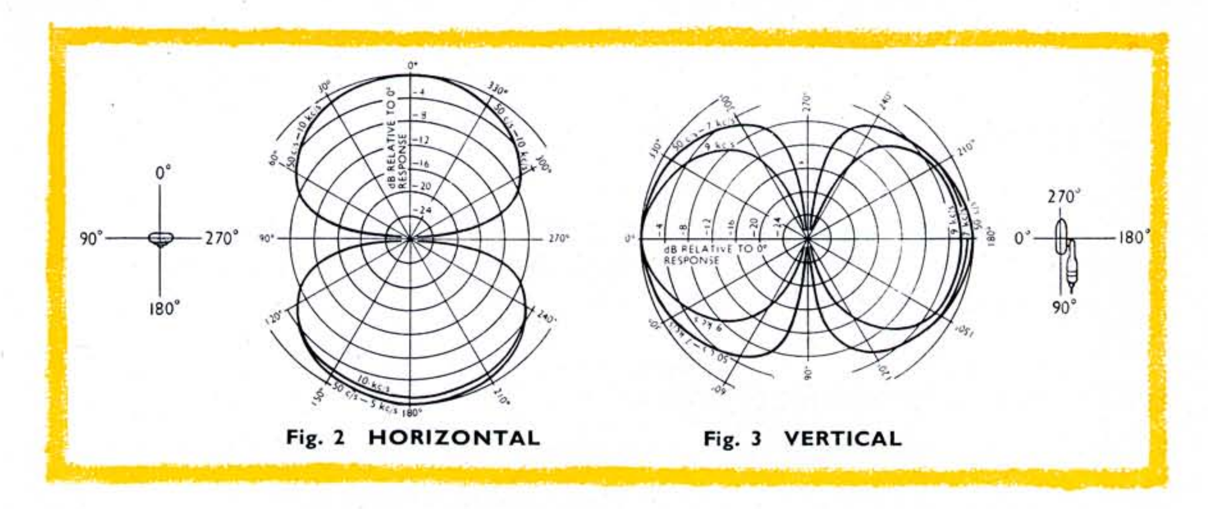
DIMENSIONS

7¾ in x 3¼ in x 2⅜ in (197 x 83 x 61 millimetres) overall.

WEIGHT

2 lb 6 oz (1,08 Kg).

POLAR RESPONSE



ACCESSORIES

4069A Jack.

LCR.1113 Twin Screened Cable (order in yards as required).

395-LTA-4A Anti-Vibration Mounting (recommended when the microphone is used on a floor stand).

PAS 45/48 Wooden Transit Box (optional).

For other accessories, stands, etc., see Accessories List.



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